

Appl. No. 10/696,917

Amdt. Dated June 8, 2006

Reply to Office Action of March 8, 2006

REMARKS

This is a full and timely response to the non-final Office action mailed March 8, 2006. Reexamination and reconsideration in view of the foregoing amendments and following remarks is respectfully solicited.

Claims 1-5 and 7-16 are pending in this application, with Claims 1 and 12 being the independent Claims. Claims 1, 2, 3, 12, and 13 have been amended. Claims 17, 19, and 20 have been cancelled. No new matter is believed to have been added.

Rejections Under 35 U.S.C. § 103

The Examiner has rejected Claims 1-5, 7, 8, 12-15, 19, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Kaprelian in view of Okazaki and Kadwell.

Claims 1 and 12 have been amended to include detecting a second portion of scattered light from the primary emitter with a secondary receive detector that is associated with a secondary emitter and a secondary monitor detector. Specifically, Claim 1 includes the limitation "detecting a second portion of the infrared light beam scattered by the at least one of air and smoke with a secondary receive detector, the secondary receive detector being associated with a secondary emitter and a secondary monitor detector." Claim 12 includes the limitation "receiving a second portion of the light using a second receive detector, the second portion of the light having been scattered by the at least one of the air and smoke, the secondary receive being directed at a line intersecting a second emitter and a second monitor detector."

Kaprelian discloses a smoke detector which incorporates the features and functions of both light obscuration detection and light absorption detection (col.2, lines 41-45). As illustrated in Figure 1, the body 10 of the smoke detector comprises a base 12 and a series of segmented outer walls 14 and a series of segmented inner walls 16, which are preferably molded from a black and integral with a base 12. The walls 14 and 16 are formed and arranged to allow the ingress of smoke to a smoke chamber 18 while blocking the entrance of ambient light. (col. 3, lines 16-26) Within the smoke chamber 18 is a

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concave mirror 20, a light emitting diode 24 on one side of the mirrors optical access 22, and a photodiodes 26 on the opposite side of the optical access 22. (col. 3, lines 28-45) A second photodiode 28 is located on the one side of the smoke chamber 18. The second photodiode 28 receives scattered light from smoke within the smoke chamber 18 (col. 3, lines 50-54). Kaprelian makes no mention of a second receive detector. Specifically, Kaprelian does not disclose detecting a second portion of scattered light from the primary emitter with a secondary receive detector that is associated with a secondary emitter and a secondary monitor detector.

Okazaki discloses a fire detecting apparatus. As shown in Figure 4, a dark chamber 42 is formed as a smoke detection space in a casing 41. A light-emitting device 43 emits light into the dark chamber 42, and a light-receiving device 45 receives light from the dark chamber 42. (col. 5, lines 11-22) The light from the light-emitting device 43 is normally not received by the light-receiving device 45. However, when smoke is present in the dark chamber 42, some of the light is reflected by the smoke particles into the light-receiving device 45. As shown in Figure 4, only a single emitter and a single receiver are provided. Specifically, Okazaki does not disclose detecting a second portion of scattered light from the primary emitter with a secondary receive detector that is associated with a secondary emitter and a secondary monitor detector.

Kadwell discloses a smoke detector including a housing defining a dark chamber admitting test with a light receiver disposed therein (Abstract). A scatter emitter is positioned within the chamber such that a light strikes the receiver when reflected off particles suspended in the test atmosphere (Abstract). As illustrated in Figure 10, the second receiver is positioned such that light 142 from the obscuration emitter 38 travels along an isolated path different from light 40. The isolated path is free from smoke in the test atmosphere 24. (col. 13, line 55 – 60) this may be accomplished by producing a sealed cavity in the housing 144 between the obscuration emitter 38 and receiver 140 by inserting a light pipe between the obscuration emitter 38 and the receiver 140. (col. 13, lines 61-63) Kadwell makes no mention of a second receive detector. Specifically, Kadwell does not disclose detecting a second portion of scattered light from the primary

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emitter with a secondary receive detector that is associated with a secondary emitter and a secondary monitor detector.

Therefore, Claims 1 and 12 are patentable over Kaprelian in view of Okazaki and Kadwell because Claims 1 and 12 includes limitations that are not taught or suggested by Kaprelian, Okazaki, and Kadwell.

Claims 2-5, 7, 8, and 13-15 are dependent on either Claim 1 or Claim 12 and should be allowable for at least the same reasons as Claims 1 and 12 stated above.

Claim 19 and 20 have been cancelled.

Applicant, accordingly, respectively requests the withdrawal of the rejections of Claims 1-5, 7, 8, 12-15, 19, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Kaprelian in view of Okazaki and Kadwell.

The Examiner has rejected Claims 9, 10, and 16 under 35 U.S.C. § 103(a) as being unpatentable over Kaprelian in view of Okazaki and Kadwell and further in view of Solomon.

Claims 9, 10, and 16 are dependent on either Claim 1 or Claim 12 and should be allowable for at least the same reasons as Claims 1 and 12 stated above.

Applicant, accordingly, respectively requests withdrawal of the rejections of Claims 9, 10, and 16 under 35 U.S.C. § 103(a) as being unpatentable over Kaprelian in view of Okazaki and Kadwell and further in view of Solomon.

The Examiner has rejected Claims 17, 19, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Kaprelian in view of Okazaki.

Claims 17, 19, and 20 have been cancelled.

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Conclusion

Based on the above, independent Claims 1 and 12 are patentable over the citations of record. The dependent Claims are also submitted to be patentable for the reasons given above with respect to the independent Claims and because each recite features which are patentable in its own right. Individual consideration of the dependent Claims is respectfully solicited.

The other art of record is also not understood to disclose or suggest the inventive concept of the present invention as defined by the Claims.

Hence, Applicant submits that the present application is in condition for allowance. Favorable reconsideration and withdrawal of the objections and rejections set forth in the above-noted Office Action, and an early Notice of Allowance are requested.

If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the below-listed number.

If for some reason Applicant has not paid a sufficient fee for this response, please consider this as authorization to charge Ingrassia, Fisher & Lorenz, Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

INGRASSIA FISHER & LORENZ

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By: Mark A. Kupanoff
Mark A. Kupanoff
Reg. No. 55,349
(480) 385-5060